

WHAT IS CLAIMED IS:

1. An imaging apparatus which comprises an imaging unit for forming an object image, and generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, generation means for generating a single image from a plurality of images obtained by said imaging unit by a plurality of shifts using said optical shift unit, and storage means for converting an image obtained by said imaging unit or the image generated by said generation means into a predetermined data format, and storing the converted image in a storage medium, comprising:
  - an operation unit for manually setting a photographing mode of said imaging apparatus; and
  - control means for setting the data format and controlling supply of an image to said storage means in correspondence with the set photographing mode.
2. The apparatus according to claim 1, wherein the data format includes image compression.
3. The apparatus according to claim 1, wherein said control means supplies the image obtained by said imaging unit to said storage means when a first photographing mode suitable for a moving object is set, and supplies the image generated by said generation means to said storage means when a second photographing

mode suitable for a still object is set.

4. The apparatus according to claim 3, wherein when the second photographing mode is set, said control means sets a data format with a compression rate higher than a 5 compression rate in a data format set when the first photographing mode is set.

5. The apparatus according to claim 1, further comprising correction means for correcting an influence of vibration on said apparatus using said optical shift 10 unit, and

wherein said generation means drives said optical shift unit via said correction means to capture the plurality of images.

6. The apparatus according to claim 1, wherein said 15 control means sets the data format and controls supply of an image to said storage means in correspondence with a free storage capacity of said storage medium.

7. The apparatus according to claim 6, wherein said control means sets a data format with a high compression 20 rate and supplies the image obtained by said imaging unit to said storage means irrespective of the set photographing mode when the free storage capacity of said storage medium is not more than a predetermined value.

25 8. An imaging apparatus which comprises an imaging unit for forming an object image, and generating an

image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, photographing means for storing, in a memory, a plurality of images 5 obtained by said imaging unit by a plurality of shifts using said optical shift unit, generation means for generating a single image from the plurality of images stored in said memory, and storage means for converting the image stored in said memory or the image generated 10 by said generation means into a predetermined data format, and storing the converted image in a storage medium, comprising:

15 a sensor for detecting a state of said apparatus upon photographing; and

15 control means for setting the data format and controlling supply of an image to said storage means in correspondence with the detected state of said apparatus.

9. The apparatus according to claim 8, wherein the 20 data format includes image compression.

10. The apparatus according to claim 8, wherein said control means sets the data format and controls supply of an image to said storage means in correspondence with a vibration level of said apparatus detected by said 25 detection means.

11. The apparatus according to claim 10, wherein said

control means supplies the plurality of images stored in said memory to said storage means when the vibration level is not less than a predetermined value, and supplies the image generated by said generation means 5 when the vibration level is less than the predetermined value.

12. The apparatus according to claim 11, wherein when the vibration level is not less than the predetermined value, said control means sets a data format with a data 10 compression rate lower than a compression rate in a data format set when the vibration level is less than the predetermined value.

13. The apparatus according to claim 8, further comprising correction means for correcting an influence 15 of vibration on said apparatus using said sensor and optical shift unit, and

wherein said photographing means drives said optical shift unit via said correction means to capture the plurality of images.

20 14. The apparatus according to claim 8, wherein said control means sets the data format and controls supply of an image to said storage means in correspondence with a free storage capacity of said storage medium.

15. The apparatus according to claim 9, wherein said 25 control means sets a data format with a high compression rate and supplies the image obtained by said imaging

unit to said storage means irrespective of the set photographing mode when the free storage capacity of said storage medium is not more than a predetermined value.

5    16. An imaging method for an imaging apparatus which comprises an imaging unit for forming an object image, and generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging

10    unit, a generation unit for generating a single image from a plurality of images obtained by said imaging unit by a plurality of shifts using said optical shift unit, a storage unit for converting an image obtained by said imaging unit or the image generated by said generation

15    unit into a predetermined data format, and storing the converted image in a storage medium, and an operation unit for manually setting a photographing mode of said imaging apparatus, comprising the steps of:

          setting the data format in correspondence with the  
20    set photographing mode; and

          controlling supply of an image to said storage unit in correspondence with the set photographing mode.

17. The method according to claim 16, further comprising the steps of:

25    setting the data format in correspondence with a free storage capacity of said storage medium; and

controlling supply of an image to said storage unit in correspondence with the free storage capacity.

18. The method according to claim 17, wherein when the free storage capacity of said storage medium is not more than a predetermined value, a data format with a high compression rate is set and the image obtained by said imaging unit is supplied to said storage unit irrespective of the set photographing mode.

19. An imaging method for an imaging apparatus which comprises an imaging unit for forming an object image, and generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, a photographing unit for storing, in a memory, a plurality of images obtained by said imaging unit by a plurality of shifts using said optical shift unit, a generation unit for generating a single image from the plurality of images stored in said memory, a storage unit for converting the image stored in said memory or the image generated by said generation unit into a predetermined data format, and storing the converted image in a storage medium, and a sensor for detecting a state of said apparatus upon photographing, comprising the steps of:

25 setting the data format in correspondence with the detected state of said apparatus; and

controlling supply of an image to said storage unit in correspondence with the detected state of said apparatus.

20. The method according to claim 19, further  
5 comprising the steps of:

setting the data format in correspondence with a free storage capacity of said storage medium; and

controlling supply of an image to said storage unit in correspondence with the free storage capacity.

10 21. The method according to claim 20, wherein when the free storage capacity of said storage medium is not more than a predetermined value, a data format with a high compression rate is set and the image obtained by said imaging unit is supplied to said storage unit  
15 irrespective of the set photographing mode.

22. A computer program product comprising a computer readable medium having computer program code, for executing imaging processing of an imaging apparatus having an imaging unit for forming an object image, and  
20 generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, a generation unit for generating a single image from a plurality of images obtained by said imaging unit by a  
25 plurality of shifts using said optical shift unit, a storage unit for converting an image obtained by said

imaging unit or the image generated by said generation unit into a predetermined data format, and storing the converted image in a storage medium, and an operation unit for manually setting a photographing mode of said 5 imaging apparatus, said product comprising:

setting procedure code for setting the data format in correspondence with the set photographing mode; and  
controlling procedure code for controlling supply of an image to said storage unit in correspondence with 10 the set photographing mode.

23. A computer program product comprising a computer readable medium having computer program code, for executing imaging processing of an imaging apparatus having an imaging unit for forming an object image, and 15 generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, a photographing unit for storing, in a memory, a plurality of images obtained by said imaging unit by a plurality 20 of shifts using said optical shift unit, a generation unit for generating a single image from the plurality of images stored in said memory, a storage unit for converting the image stored in said memory or the image generated by said generation unit into a predetermined 25 data format, and storing the converted image in a storage medium, and a sensor for detecting a state of

said apparatus upon photographing, said product comprising:

        setting procedure code for setting the data format in correspondence with the detected state of said  
5    apparatus; and

        controlling procedure code for controlling supply of an image to said storage unit in correspondence with the detected state of said apparatus.

24. An imaging apparatus which comprises an imaging  
10    unit for forming an object image, and generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, generation means for generating a single image from a plurality of images  
15    obtained by said imaging unit by a plurality of shifts using said optical shift unit, and storage means for converting an image obtained by said imaging unit or the image generated by said generation means into a predetermined data format, and storing the converted  
20    image in a storage medium, comprising:

        detection means for detecting characteristics of the object; and

        control means for setting a shift method of photographing using said optical shift unit in  
25    accordance with the detected characteristics of the object.

25. The apparatus according to claim 24, wherein said detection means detects the characteristics of the object on the basis of spatial frequency characteristics of an image of the object obtained by said imaging unit.

5 26. The apparatus according to claim 25, wherein said detection means detects the characteristics of the object on the basis of high-frequency components in units of color components of the image of the object.

27. The apparatus according to claim 26, wherein said 10 control means sets different shift methods in correspondence with a comparison result of the high-frequency components in units of color components contained in the image of the object.

28. The apparatus according to claim 27, wherein 15 assuming that P represents a pixel pitch in X- and Y-directions, which are perpendicular to each other, of said imaging unit, when the image of the object has characteristics including many green high-frequency components, said generation means captures the plurality 20 of images used for generating the single image by first photographing, second photographing upon image position shifting by P in the X-direction, third photographing upon imaging position shifting by  $-P/2$  in the X-direction and  $P/2$  in the Y direction, and fourth 25 photographing upon imaging position shifting by  $-P$  in the X-direction.

29. The apparatus according to claim 28, wherein when the image of the object has characteristics including many red or blue high-frequency components, said generation means captures the plurality of images used 5 for generating the single image by first photographing, second photographing upon imaging position shifting by  $P$  in the X-direction, third photographing upon imaging position shifting by  $P$  in the Y direction, and fourth photographing upon imaging position shifting by  $-P$  in 10 the X-direction.

30. An imaging method for an imaging apparatus which comprises an imaging unit for forming an object image, and generating an image signal by photoelectric conversion, an optical shift unit for optically shifting 15 an imaging position of the object image in said imaging unit, generation means for generating a single image from a plurality of images obtained by said imaging unit by a plurality of shifts using said optical shift unit, and storage means for converting an image obtained by 20 said imaging unit or the image generated by said generation means into a predetermined data format, and storing the converted image in a storage medium, comprising the steps of:  
detecting characteristics of the object; and  
25 setting a shift method of photographing using said optical shift unit in accordance with the detected

characteristics of the object.

31. A computer program product comprising a computer readable medium having computer program code, for executing imaging processing of an imaging apparatus  
5 having an imaging unit for forming an object image, and generating an image signal by photoelectric conversion, an optical shift unit for optically shifting an imaging position of the object image in said imaging unit, generation means for generating a single image from a  
10 plurality of images obtained by said imaging unit by a plurality of shifts using said optical shift unit, and storage means for converting an image obtained by said imaging unit or the image generated by said generation means into a predetermined data format, and storing the  
15 converted image in a storage medium, said product comprising:

detecting procedure code for detecting characteristics of the object; and

20 setting procedure code for setting a shift method of photographing using said optical shift unit in accordance with the detected characteristics of the object.